

CLAIMS

1. A dc-ac converter, comprising:

a dc power supply;

a transformer having a primary winding and at least one secondary winding;

a semiconductor switch circuit for alternately flowing current from said dc power supply to said primary winding in a first and a second directions;

a load connected to said secondary winding;

a current detection circuit for detecting the magnitude of said current flowing through said load to generate a current detection signal;

a triangular wave signal generation circuit for generating a triangular wave signal;

a PWM control signal generation circuit, receiving said triangular wave signal and said current detection signal, for generating a PWM control signal by comparing said triangular wave signal with an error signal that is formed based on said current detection signal; and

a switch driving circuit receiving said PWM control signal and a run-stop signal, said switch driving circuit adapted to provide said semiconductor switch circuit with switch drive signals in accord with said PWM control signal when said run-stop signal has a logical run-state, but, when said run-stop signal has a logical stop-state (instructing standby), provide said semiconductor switch circuit with switch drive signals instructing not to flow current to said primary winding,

wherein when said run-stop signal gains the stop-state

the power from said power supply to said PWM control signal generating circuit and switch driving circuit is cut off; and

said switch driving circuit controls at least one of the switch drive signals enabling the switches of said semiconductor switch circuit so as to turn off said at least one switch.

2. The dc-ac converter according to claim 1, wherein the switches of said semiconductor switch circuit are MOSFETs.

3. The dc-ac converter according to claim 2, wherein said switch driving circuit has a logic circuit receiving said PWM control signal and run-stop signal, said switch driving circuit adapted to form said switch drive signal based on the output of said logic circuit.

4. The dc-ac converter according to claim 2, wherein said switch driving circuit has:

a logic circuit receiving said PWM control signal and said run-stop signal;

a logic block for generating switch drive signals in accordance with a predetermined logic based on said PWM control signal that has passed said logic circuit and a clock synchronized with said triangular wave signal; and

an output block outputting gate drive signals by amplifying said switch drive signals.

5. The dc-ac converter according to claim 4, wherein said output block

is:

adapted to amplify and invert said inputted switch drive signals before outputting said signals as gate drive signals;

provided at the output end thereof with a pulling resistor for pulling the level of said gate drive signals to predetermined potential; and

adapted to render said pulling resistor short-circuited when said run-stop signal gains the stop-state.

6. The dc-ac converter according to claim 1, wherein said load is a cold cathode fluorescent light.

7. A controller IC for controlling ac power supplied to a load by driving a semiconductor switch circuit, said controller IC comprising:

a triangular wave signal generation block, connected to an external capacitor and a resistor for establishing oscillation, for generating a triangular wave signal;

a PWM control signal generation circuit, receiving said triangular wave signal and a current detection signal indicative of the magnitude of detected current flowing through said load, for generating a PWM control signal by comparing said triangular wave signal with an error signal that is formed based on said current detection signal; and

a switch driving circuit receiving said PWM control signal and a run-stop signal, said switch driving circuit adapted to provide said semiconductor switch circuit with switch drive signals in accord with said PWM control signal when said run-stop signal has a logical

run-state but, when said run-stop signal has a logical stop-state (instructing standby), provide said semiconductor switch circuit with switch drive signals instructing not to flow current to said primary winding,

wherein, when said run-stop signal gains the stop-state,

the power from said power supply to said PWM control signal generating circuit and switch driving circuit is cut off; and

said switch driving circuit controls at least one of the switch drive signals enabling the switches of said semiconductor switch circuit so as to turn off said at least one switch.

8. The controller IC according to claim 7, wherein said switch driving circuit has a logic circuit receiving said PWM control signal and run-stop signal, said switch driving circuit adapted to form said switch drive signal based on the output of said logic circuit.

9. The controller IC according to claim 7, wherein said switch driving circuit has:

a logic circuit receiving said PWM control signal and run-stop signal;

a logic block for generating switch drive signals in accordance with a predetermined logic based on said PWM control signal that has passed said logic circuit and a clock synchronized with said triangular wave signal; and

an output block for outputting gate drive signals by amplifying said switch drive signals.

10. The controller IC according to claim 9, wherein
said output block is:

adapted to amplify and invert said inputted switch drive
signals before outputting said signals as gate drive signals;

provided at the output end thereof with a pulling resistor for
pulling the level of said gate potential to a predetermined potential;
and

adapted to render said pulling resistor short-circuited when said
run-stop signal gains the stop-state.